■ Interagency Ecological Program for the Sacramento-San Joaquin Estuary ■

IEP NEWSLETTER

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ern Delta was only sampled in September and in 1985 only in September and October, which would lead to underestimates of the threadfin shad fall indices.

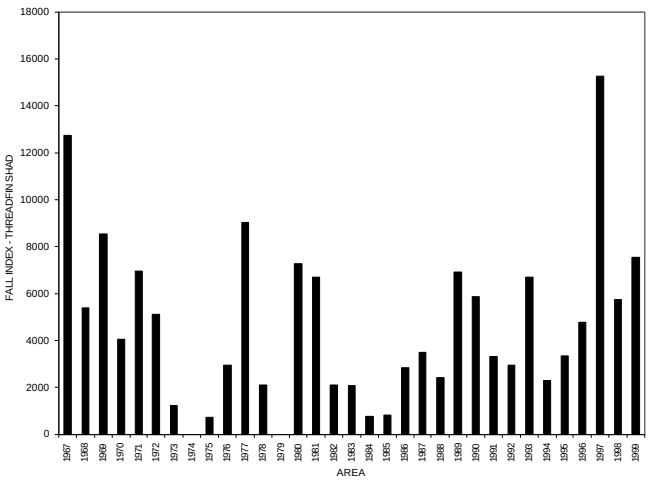

Figure 6 Fall midwater trawl indices of abundance for threadfin shad, 1967–1999. No surveys were conducted in 1974 and 1979.

More striped bass and American shad information may be viewed on our website. The URL for the site is http://www2.delta.dfg.ca.gov/data/mwt99/index.html.

References

Gartz R, Foss S, Miller L. 1999. Striped bass and American shad abundance. IEP Newsletter 12(2):42–44.

Fish Salvage at the State Water Project and Central Valley Project Facilities

Steve Foss, DFG
sfoss@delta.dfg.ca.gov

In 1999, monthly water exports at the State Water Project (SWP) ranged from 52,309 acre-feet (AF) in February to 410,845 AF in August (Figure 1). This was higher than the 1998 range of 1,839 AF to 295,816 AF. SWP water exports totaled 2,707,517 AF in 1999, compared to 1,687,404 AF in 1998. Monthly exports of water at the Central Valley Project (CVP) ranged from a low of 100,716 AF in April to a high of 269,790 AF in August, compared to the 1998 range of 579 AF to 268,748 AF. CVP water exports totaled 2,533,967 AF in 1999 compared to 2,092,194 AF in 1998.

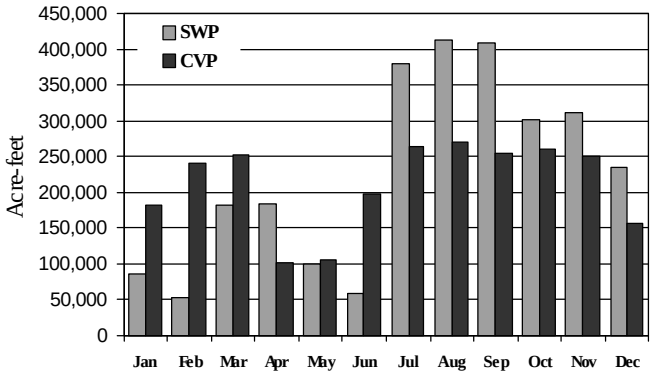

Figure 1 Monthly acre-feet of water exported in 1999 for CVP and SWP

The number of fish salvaged per acre-foot was highest at the SWP in July (4.4) and at the CVP in June (3.7) (Figure 2). Striped bass accounted for much of the salvage in July at the SWP (65%) and during June at the CVP (64%).

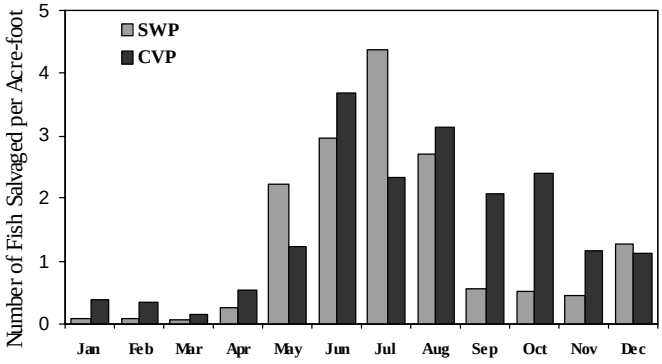

Figure 2 Number of fish salvaged per acre-foot of water exported in 1999

More delta smelt were salvaged at the SWP in 1999 than in any other year (Figure 3). More than 107,000 delta smelt were salvaged at the SWP, almost double the total in 1988, the previous high. At the CVP, about 47,000 delta smelt were salvaged, the most since 1981 (Figure 4). More than 99% of the delta smelt were salvaged during May, June, and July (Figure 5).

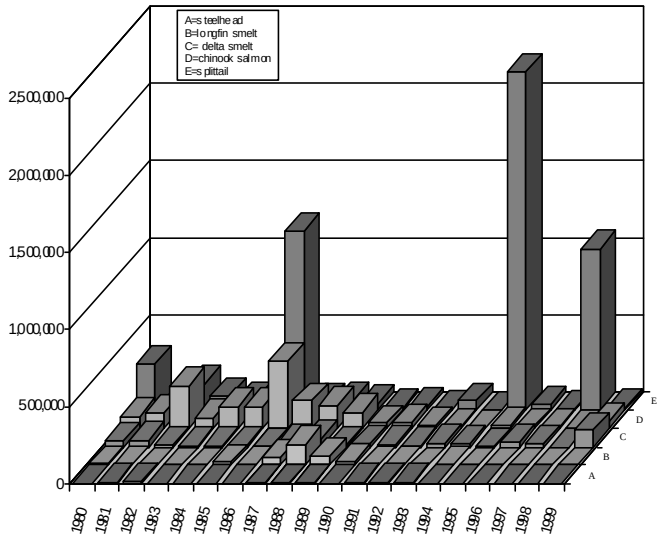

Figure 3 Number of fish of special concern salvaged at the SWP: (A) steelhead, (B) longfin smelt, (C) delta smelt, (D) chinook salmon, and (E) splittail

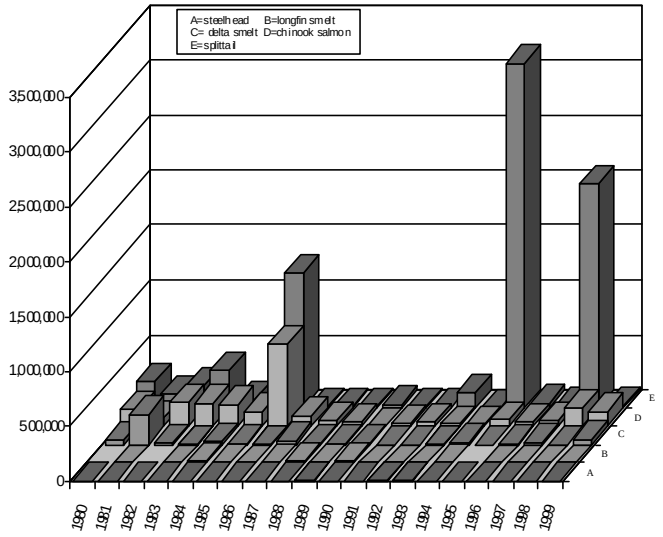

Figure 4 Number of fish of special concern salvaged at the CVP: (A) steelhead, (B) longfin smelt, (C) delta smelt, (D) chinook salmon, and (E) splittail

Salvage of chinook salmon at the SWP in 1999 was low compared to the CVP (Figures 3 and 4). Peak salmon salvage at the SWP exceeded 23,600 in both April and May, but at the CVP, salmon salvage was high in February, April, and May and ranged from 33,354 to 38,148 during those months (Figure 6). The majority of salmon salvaged in February were fall-run-sized fish, but in April and May, there was a mix of fall-run- and spring-run-sized fish.

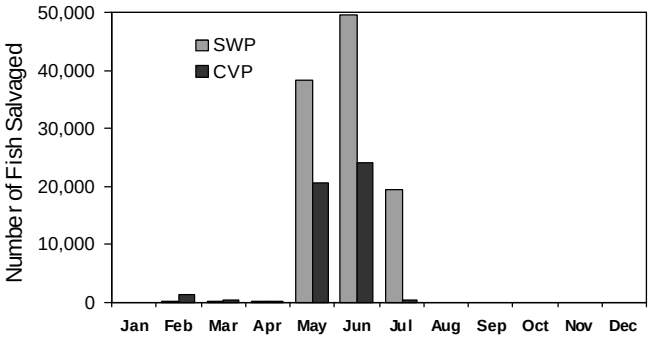

Figure 5 Number of delta smelt salvaged in 1999 by month and facility

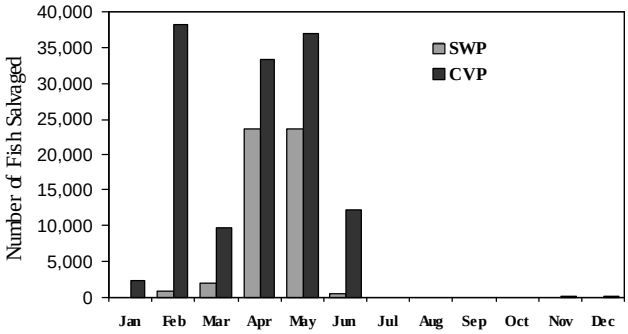

Figure 6 Number of chinook salmon salvaged in 1999 by month and facility

Steelhead salvage was higher at the CVP (1,556) than at the SWP (1,076) (Figures 3 and 4) and was highest in April at both facilities (Figure 7). Most of the steelhead salvaged at the SWP (89%) and CVP (95%) were wild, non-adipose-fin-clipped fish. The combined salvage from the two facilities was higher than the two previous years, but was only about 35% of the ten-year average (1990–1999).

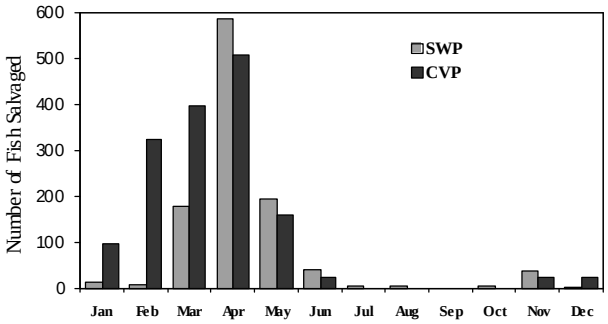

Figure 7 Number of steelhead salvaged in 1999 by month and facility

Striped bass salvage peaked in July at the SWP and in June at the CVP. Over 1 million striped bass were salvaged in July at the SWP and more than 464,000 were salvaged in June at the CVP (Figure 8). Young-of-the-year fish accounted for the high numbers salvaged at the facilities in June and July. In 1999, salvage of striped bass was the highest at the SWP since 1993 and highest at the CVP since 1994 (Figures 9 and 10). Since 1993, however, striped bass have been salvaged in lower numbers than between 1984 and 1989.

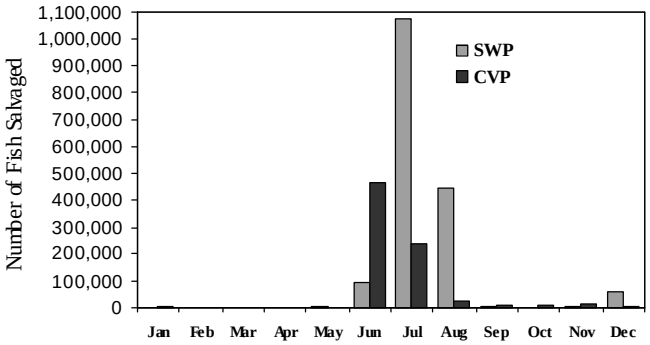

Figure 8 Number of striped bass salvaged in 1999 by month and facility

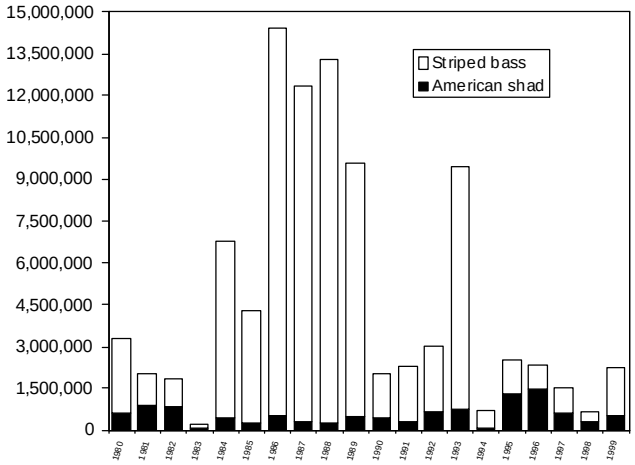

Figure 9 Number of striped bass and American shad salvaged at the SWP

Salvage of American shad peaked twice at the SWP in 1999: once in August, with more than 264,000 salvaged, and again in December (Figure 11). At the CVP, salvage of American shad reached 173,000 fish in August. Most American shad salvaged were age 0. American shad salvage in 1999 was lower than the highs of 1.5 million salvaged at the SWP and 972,000 salvaged at the CVP in 1996.

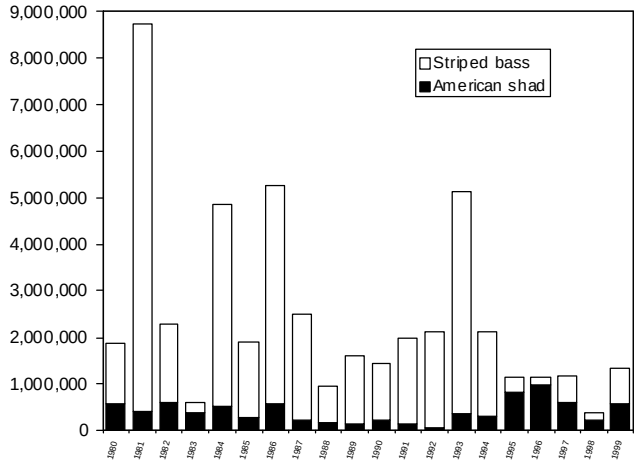

Figure 10 Number of striped bass and American shad salvaged at the CVP

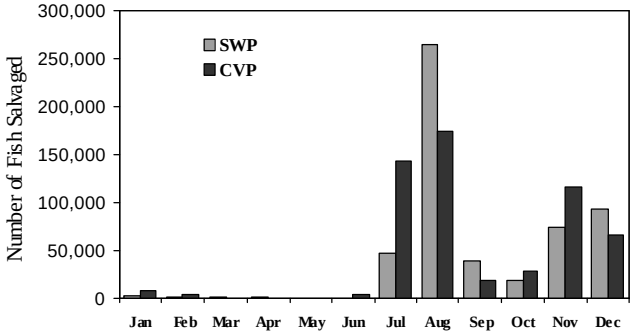

Figure 11 Number of American shad salvaged in 1999 by month and facility

Splittail salvage was highest in July at both facilities; about 10,000 were salvaged at each facility in that month (Figure 12). In 1999, splittail salvage at the SWP and CVP was only about 1% of last year's salvage (Figures 3 and 4). Few longfin smelt were salvaged at either facility: only 673 were salvaged at the SWP and 132 at the CVP (Figures 3 and 4).

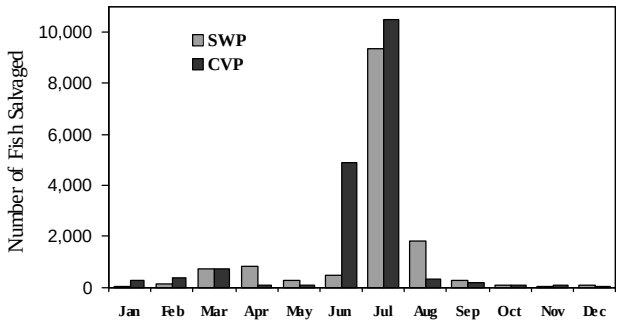

Figure 12 Number of splittail salvaged in 1999 by month and facility